

Author reply: Toward a multilevel mechanistic explanation of complex regularities

between environment and emotional components

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Abstract

In reply to the commentary's of Nesse (2014), Gendolla (2014), Schweder (2014), Zachar (2014), and Clay-Warner (2014), I repeat the essential features of appraisal theories of the second flavor: They take emotional components (and not specific emotions) as the phenomenon to be explained, and they strive for a multilevel mechanistic explanation that leaves room for complex and dynamical processes or mechanisms. Every mechanistic explanation starts with an accurate description of regularities between inputs and outputs. Regularities do not not preclude context-dependent variety, because there is no limit to the number of input factors that can influence the output, and back.

Keywords: appraisal, mechanistic, regularities, situated

Theories can be situated on a continuum from broad to narrow. As noted by Nesse (2014), none of the theories presented in this special section is situated on the extreme broad end because none of them seeks to answer all possible questions. Still, each of the theories comprises (a) a broad framework with working hypotheses that are provisionally accepted, and (b) a more narrow body of concrete falsifiable hypotheses. I agree with Gendolla (2014) and Schweder (2014) that there is room for improvement on the narrow side, but I do not think we should get rid of the broad frameworks that spell out the background assumptions. It is not by keeping our assumptions implicit that they will disappear or stop influencing our research.

As Zachar (2014) argues, differences between emotion theories can sometimes be clarified by positioning them into larger philosophical debates. Let me be more explicit about some of my philosophical commitments, and in passing, try to correct a few tenacious misunderstandings about appraisal theories, again.

One issue is essentialism. Appraisal theories of the second flavor are not committed to, but neither incompatible with, some form of essentialism (e.g., the idea that *some* objects have some essential properties, Robertson & Atkins, 2013). The point is that they are not essentialist about specific emotions. They do not put forward an essence of anger and fear. This is exactly why they propose to shift the to-be-explained phenomenon from specific emotions (e.g., anger, fear) to emotional components (e.g., the tendency to fight and flee; Ortony & Turner, 1990). They may or may not be essentialist about emotional components or other things.

Another issue is type of explanation. Appraisal theorists of the second flavor seek a mechanistic explanation for the emotional components of action tendencies, expressive behavior, physiological responses, and feelings (as was noted by Nesse, 2014). Any mechanistic approach is multilevel. On a high level, appraisal theorists try to map out the

regularities between environmental conditions and emotional components. In addition, they assume that an information process called appraisal is part of the transition from environment to the emotional components. On a lower level, the appraisal process or mechanism can be decomposed further into subprocesses. In addition to identifying the subprocesses, a mechanistic explanation must specify how they are organised or interact so that they constitute the appraisal process as a whole and influence the other emotional components. Taking a mechanistic approach does not commit one to embracing the existence of simple, linear mechanisms, but is entirely compatible with complex and dynamic ones (Bechtel, 2008; Scherer, 2009). Decomposition can be reiterated accross ever lower levels until the subprocesses correspond to physical brain processes.

Research on the neural underpinnings of appraisal gains territory (cf. Brosch & Sander, 2013), but most appraisal research to date has concentrated on the high level, describing the regularities between environmental factors and emotional components. Appraisal theories have proposed many narrow hypotheses of the kind requested by Gendolla (2014) and Schweder (2014). The emotional intensity theory (Brehm, 1999) discussed by Gendolla proposes a list of factors, of which some overlap with appraisal factors (e.g., “as long as success is possible” overlaps with the appraisal factor “control”) and others do not (e.g., “the difficulty to act”).

The reason why Gendolla (2014) does not appreciate this overlap in agenda is that he exclusively targets the first flavor of appraisal theories and ignores the second flavor. This is apparent when he writes that it is unclear if emotions or the appraisals themselves influence behavior (p. x). Second-flavor appraisal theories, however, are very clear that emotions do *not* mediate between appraisals and behavior; the only thing that comes between appraisals and behavior are action tendencies and bodily responses preparing for behavior. Emotion is nothing but the umbrella term covering all components. Gendolla (2014, p. x) also writes that

appraisal theories claim that fear motivates avoidance of the object one is afraid of, but that this only specifies fear as the input and avoidance as the output, and that the conditions under which an organism avoids remain unclear. Again, second-flavor appraisal theories do *not* take fear as the input and avoidance as the output. They consider relations between appraisals and action tendencies or actions without linking any of these to specific emotions such as fear. In this way, they do focus on the conditions under which avoidance occurs. They examine, for example, whether avoidance is more likely under conditions of goal incongruence and low control.

The list of conditions or factors studied is open to elaboration, or as Ellsworth (2013, p. 127) put it, current “appraisal theories can get us to the right branch of the emotional tree, but not to the right twig”. Moreover, Clay-Warner (2014) correctly notes that research should extend its focus beyond appraisal factors to factors whose influence is mediated by appraisal factors and factors that moderate the influence of appraisal factors. Thus, appraisal theories’ commitment to the existence of regularities is not in opposition to the idea that emotional components are situated (i.e, vary according to the context) because there is no limit to the number of factors that may influence the components or to the complexity of the relations among the factors. Unraveling these complexities is precisely what appraisal researchers try to do (see e.g., Bossuyt, Moors, & De Houwer, in press)

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